SEP 21 1949
AERONAUTICS DIVISION

Southern FLIGHT

Including MODERN AIRPORTS

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JULY 1949
35 cents

Navion Take-off at 8,700-Ft. Altitude

(See "We Fly the High Way," page 8)

Rancher...manufacturer...publisher prove

Bonanza travel pays

Sundays, Paul Harbaugh goes to church — 200 miles away! He and his wife fly their Bonanza to Oklahoma City from their busy Texas ranch in just over an hour. Weekdays he rounds up cattle by air and even picks up mail. When roads are snowbound, the Bonanza is often the only transportation moving.

Key men of Reuland Electric Company, Alhambra, California, can now cover all distributors and sales meetings and still keep up with home office work. Two company-owned 4-place Bonanzas double their productive time. Company gives outstanding service with Bonanza emergency deliveries of Reuland Electric Motors. Says Howard Reuland, "Our Bonanzas are paying investments."

A string of newspapers from Gadsden, Alabama, to Middletown, New York, takes lots of attention. Carmage Walls, president, General Newspapers, Inc., can do it with a Bonanza available for anytime mobility. "Doubles my capacity for work," he states.

Newspaper men find it ideal for spot news coverage. Amazing economy. Pennies-per-mile operating cost.

Apply Bonanza Transportation to your business

Company ownership of this fast, *quiet* plane turns travel days into travel *hours* — time saved you can put to *profitable* use. Investigate! A note on your company letterhead will bring an informative 60-page brochure on "The Air Fleet of American Business." Write today to Beech Aircraft Corp., Wichita, Kansas.

Top speed, 184 mph • Cruising speed, 170 mph • Range, 750 miles

Beechcraft BONANZA MODEL A35

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

Welcome

CHANCE VOUGHT *to the Southwest*

The Flying Red Horse is proud to have been selected as a supplier of aviation fuels and lubricants used at Chance Vought Aircraft's new Texas plant, in which the veteran aircraft company will continue its 32-year tradition of manufacturing the Navy's finest fighters.

Mobilgas AIRCRAFT

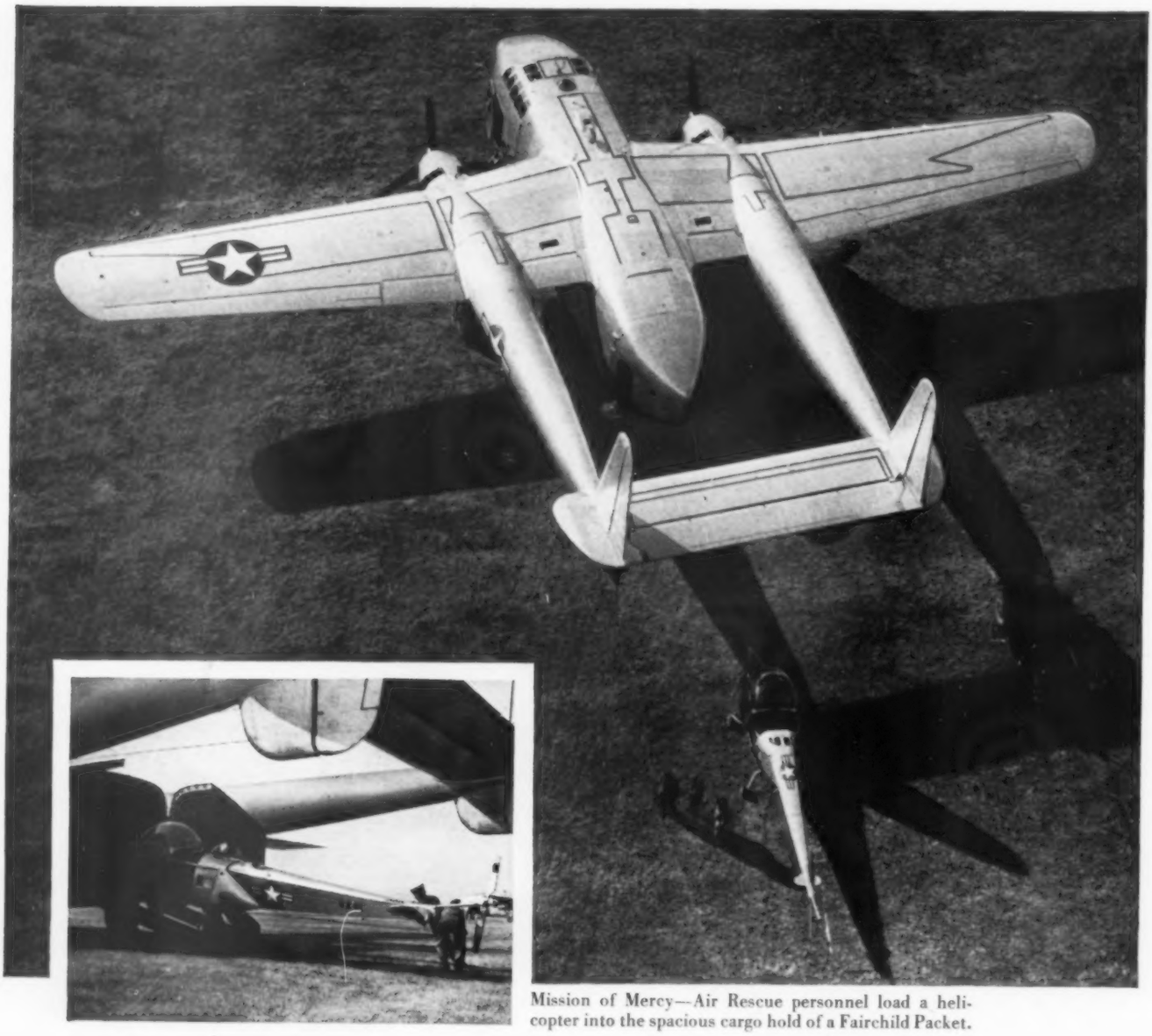
FORWARD WITH *Aviation*

Mobiloil AERO

MAGNOLIA PETROLEUM COMPANY

AIR RESCUE

Over faraway jungles, deserts and mountains, helicopters of the USAF Air Rescue Service have flown in search of stranded airmen and passengers. The helicopters got there because they have been given a "mother" ship—the Fairchild Packet—that transports them over distances far beyond their range. Thus, our Air Force has added a new ability to the versatile Fairchild Packet—increasing the importance of its part in the development of modern airborne military tactics.



Mission of Mercy—Air Rescue personnel load a helicopter into the spacious cargo hold of a Fairchild Packet.

FAIRCHILD ENGINE AND AIRPLANE CORPORATION
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

Divisions: Fairchild Aircraft, Hagerstown, Md. • Ranger Aircraft Engines, Farmingdale, N. Y. • Nepa, Oak Ridge, Tenn. • Fairchild Pilotless Plane, Farmingdale, N. Y.
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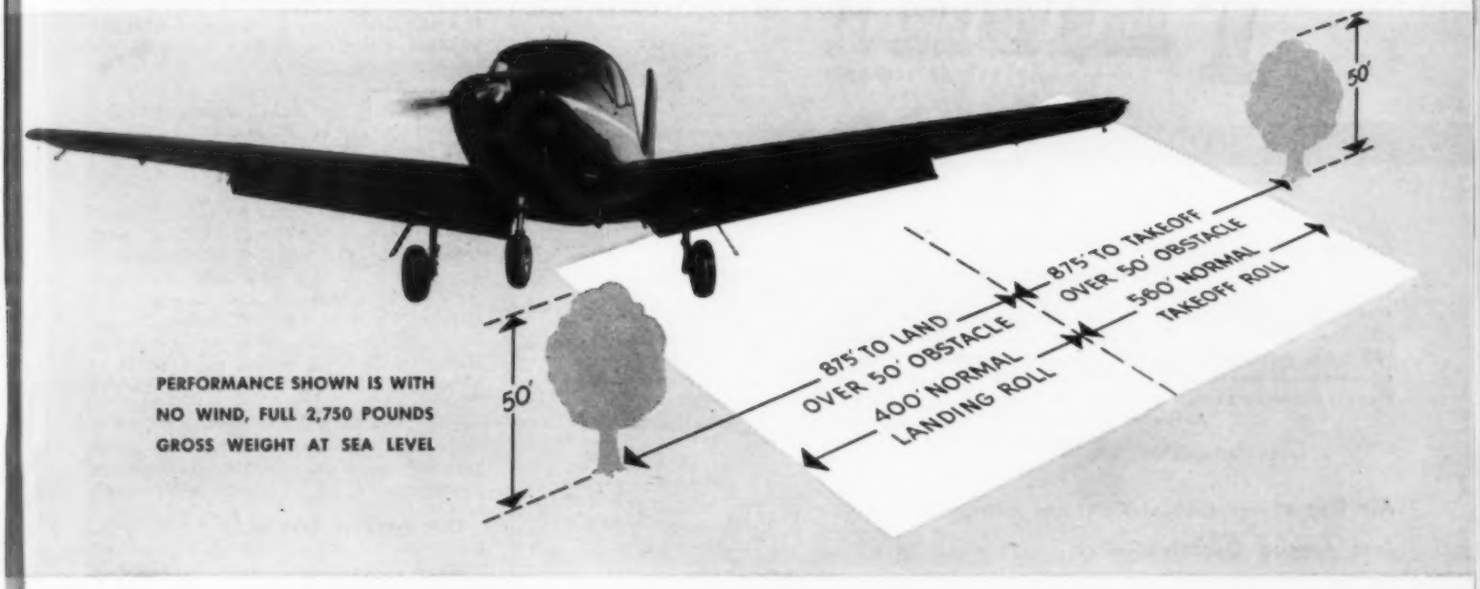
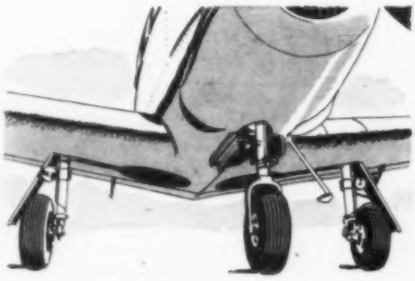
SPEAKING OF SHORT-FIELD PERFORMANCE!

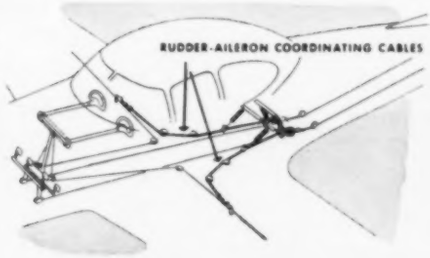
THE '49 RYAN NAVION IS IN A CLASS BY ITSELF!



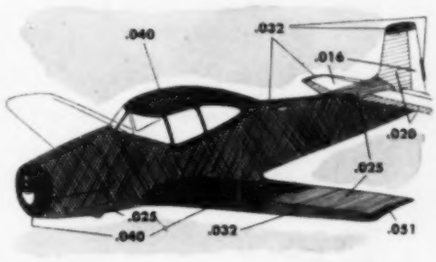
DON'T WORRY if that smooth, concrete runway is miles from where you want to go. A *Ryan Navion* will take you into short, rough strips... and out again, with ease and safety. Think of it! *Navion* lands at only 54 m.p.h. with full gross load. Its high-lift, full-deflection flaps lower 43° to make possible slow, steep approaches. Only 875 feet are needed to clear a 50-ft. obstacle—both on landing and take-off. *Navion's* husky 205 h.p. engine will give you 900-ft. of altitude in your *first minute* of flight! Performance like this is mighty important to the man who wants a rugged, versatile plane with plenty of utility that'll get him there and put him down right where he's needed. Yes, *Navion's* short-field performance is a big reason why it's the growing favorite among businessmen pilots.



WIDE WHEEL TREAD and high ground clearance...big, steerable balanced nosewheel and oversize tires enable you to set the *Navion* down smooth as velvet on rough, soft fields, even in cross winds. Big, equalized hydraulic brakes ease ground-handling. Deep-stroke hydraulic shocks are real heavyweights.



SAFE, AND EASY-TO-FLY, the 155 m.p.h. *Navion* has amazing stability, is gentle and well-behaved..."forgives" pilot error short of foolhardiness. It features "two control after take-off"...yet you have rudder when you want it. Stall-resistant wing gives aileron control *below* stalling speed for safety.



BIG AND RUGGED, the thick-skinned, all-metal *Navion* represents highest structural integrity in aircraft design. Low maintenance cost and permanent beauty are assured. Send now for colorful, FREE brochure which gives complete details on all 29 dramatic advancements in *Ryan Navion* for '49.

NO OTHER PLANE COMBINES SO MANY FEATURES SO WELL

Ryan Navion

Rely on Ryan RYAN AERONAUTICAL COMPANY

605 LINDBERGH FIELD, SAN DIEGO 12, CALIFORNIA

STANDARD FEATURES LIKE THESE GIVE YOU NAVION COMFORT AND CONFIDENCE

- All-Around Sound-Proofed Cabin
- Muffler and Heater
- New Ventilation System
- Individually Adjustable Front Seats
- Center Arm Rest in Rear Seat
- Recessed Arm Rests
- Thicker Foam Rubber Cushion
- 4 Individual Side Ash Trays
- Easy-Entrance Roll Back Canopy
- Thicker Plexiglas Windshields
- VHF Radio
- Improved Control Panel
- More Instruments
- Dual Fuel System

JULY, 1949 VOL. XXXII, No. 1

Southern FLIGHT

Including MODERN AIRPORTS

COVER: Shown taking off from Creede, Colorado, elevation 8,700 ft., with air temperature at 62 degrees, this Navion demonstrator equipped with metal Hartzell propeller and piloted by Texas Ryan Distributor Les Bowman was in the air after a run of only 1,100 ft. Rate of climb, however, was reduced to less than 200 fpm. by the altitude and temperature. But the nose was held down until 100 mph. was indicated, when Bowman maneuvered next to a slope to take advantage of strong updrafts. In ten minutes he had gained 5,000 ft. of altitude. Flaps appear to be full down due to wing's high angle of incidence in thin air. Actually, 30 degrees of flap were used.
—(SOUTHERN FLIGHT Photo.)

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GEORGE E. HADDAWAY
Editor and Publisher

TOM ASHLEY, managing editor. FRED N. STONES, JR., business manager.
E. H. PICKERING, editorial research. Field Representative: BOB WEMPLE.

AIR Report

Significant Trends and News

SEVEN CESSNA 195'S WILL SOON START OPERATIONS OVER IOWA AIRPLANE COMPANY'S FEEDER AIRLINE SYSTEM, certificated by CAB, which recently approved modern single-engine planes for scheduled airline VFR operations over favorable terrain. . . . **SPIN TESTS FOR STUDENT PILOTS WILL BE ELIMINATED EFFECTIVE AUG. 15** by a new change in CAR Part 43, which provides instruction in recovery from stalls.

CESSNA'S 1949 PLANE SALES DOLLAR VOLUME IS AHEAD OF THAT FOR THE SAME 1948 PERIOD, says Sales Manager Don Flower, and June orders were leading those of a year ago. One thousand 4-pl. Model 170's were delivered during the last twelve months. . . . After an operator in Maine had filed suit seeking collection of an alleged debt from **LUSCOMBE AIRPLANE CORP.** and asking a receiver be appointed for the firm, Federal Judge William H. Atwell in Dallas restrained state court proceedings against Luscombe until Aug. 25 when he will pass on Luscombe plans for refinancing and reorganization.

THE 2,000TH BONANZA has been delivered by Walter Beech and his company has initiated a top-notch customer relations program in which two-man factory service teams are visting distributors and dealers, where they meet Bonanza owners, check over 90 items on each Bonanza and brief owners on service. . . . **E. S. (ED) SAFFORD,** who joined Beech in 1939 and active since 1945 as manager of export sales, has been promoted to director of sales. . . . **"NO-BOUNCE" LANDING GEAR,** a newly-developed oleo shock strut, has been announced by Aeronca as optional equipment at $15 extra or in field conversion kits at $78 per set for installation on Model 7 Champions and Model 11 Chiefs. . . . Southwest Airmotive of Dallas is distributing revised copies of its **"VISITORS COMPASS"** containing helpful information on Love Field facilities. . . . Dallas Aero Service has announced a new **OPERATIONAL GUARANTEE ON OVERHAULED ENGINES.**

Aviation Writers Association members at recent air demonstration had a real scare when an air borne howitzer dropped in their midst. New AWA officers: Ansel Talbert, N. Y. Herald Tribune, president; Roger L. Williams of San Francisco News, George A. Scheuer of South Bend Tribune and John Stuart of N. Y. Times, vice president; Ralph H. McClarren, Franklin Institute, executive secretary, and Leslie V. Spencer, New York, treasurer. . . . **NEW AIR NAVIGATION PROGRAM** is moving into high gear. Already 289 new VHF omni-ranges are in operable condition, with 100 more to be installed; 87 ILS installations are operating out of a planned 144; 30 new airport surveillance radars and 16 precision approach radars are in engineering and construction stages. . . . **EARL WARD, FATHER OF U. S. AIR TRAFFIC CONTROL SYSTEM,** died last month in Chicago of a heart attack. He made original study and survey which later led to institution of the air traffic control system, spending full time in this field for 14 years.

LOW-PRICED EUROPEAN RATES beginning at $3 nightly have been initiated by Jack Lapham's popular Flying L Ranch near San Antonio as a mid-week accommodation for visiting airmen. ★ ★ ★

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F-80 Lockheed Shooting Star

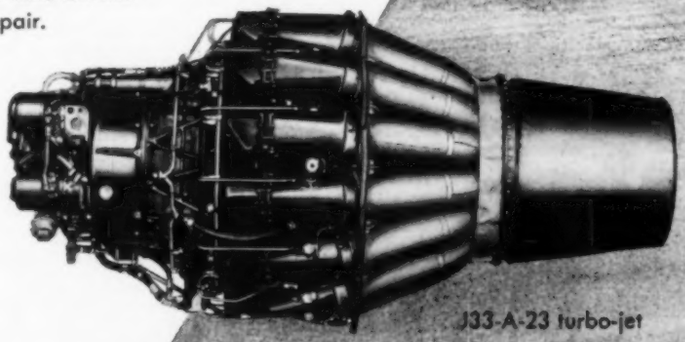
PROVED PERFORMANCE

With a total of more than 100,000 hours of actual flight time in their log book, Allison aircraft turbine engines have proved themselves with dependable performance under many varying conditions of service and of weather. Now operating 300 hours before overhaul, Allison J33 jet engines offer more useful service in the air with less lost time on the ground for service and repair.

Air Power is Peace Power

★ ★ ★

Other Allison-powered airplanes:
Republic F-84 Thunderjet
North American FJ-1 Fury
Northrop YB-49 Flying Wing
Grumman F9F-3 Panther



J33-A-23 turbo-jet

Allison

Builder of axial and centrifugal flow turbine engines

DIVISION OF GM GENERAL MOTORS

Indianapolis, Indiana

Just among ourselves

EDITORIALS

FEDERAL POLICIES AND YOU

THE other day we received a friendly complaint from an esteemed reader who believes that these columns give too much space and attention to subject matter involving government policy toward aviation. Down through the years we have heard similar complaints and, since we are primarily in business for the reader, we always take the trouble to explain just why our time and type are often given over to government policy matters affecting aviation, especially commercial aviation in the United States. Doubtless there are other readers who have the same opinion. We don't believe they realize how inseparably the destiny of aeronautics is tied to government policies, particularly at the Federal level.

Let's cite a couple of actual cases in which this publication has taken the stump, beat the drum, carried the torch and banged the table in order to get across what we considered vital and basic to the progress of aviation in this nation, not from the standpoint of selfish interests but from the standpoint of bringing into being healthy policies that will provide more benefits of air transportation to more people which in turn makes for a larger and healthier industry.

For years we have attempted to show the reasonableness of utilizing single-engine aircraft in certain types of scheduled airline operations. This campaign was spearheaded by analytical articles describing actual case histories of successful single-engine operations running on schedule and filling definite transportation needs in particular localities where all other transportation facilities, both ground and air, were either lacking or inadequate. The editorials in these columns and the feature articles, plus conferences sponsored by this publication and the wide dissemination of authentic facts and figures in non-aviation as well as aviation quarters, served to put the idea across. The idea gained rapid momentum and in the past several months even the governors of several states came through with their support of the idea. Last month the Civil Aeronautics Board announced its approval for the use of single-engine aircraft and small non-transport type multi-engine aircraft in scheduled air transportation of passengers. No doubt several short-haul feeder line operations soon will be certificated for VFR operations in regions where conditions and routes are favorable to single-engine operations.

In 1946 and 1947 this publication also took the stump for the certification of the independent air freight operators. In the March, 1947, edition we said: "The Civil Aeronautics Board can delay, but can not ultimately refuse to certificate the air freight operators and others who have crashed into the air transport business by weight of sheer vision and gamble—the same fundamental motivating forces that created our presently certificated carriers." That statement in substance sums up the long, hard fight to see justice done to a vigorous group of pioneers who are willing to stand or fall on the goods they can carry without benefit of U. S. mail pay. Two months ago four of these air freight lines were certificated, which means more air service to more people and a larger and growing market for aircraft, engines, propellers, radios and accessories, which in turn provides the nation, as a by-product of intelligent Federal aviation policy, a healthier manufacturing industry as well as additional airplanes in-being for our air transport reserve in case of national emergency.

Last year there were two companies among the "Big 10" which lost money. Ironically enough their losses stemmed largely from their attempt to build and market new twin-engine commercial air transports — Glenn Martin, which lost 16 millions, and Convair, which lost 12 millions. Is our industry to prosper only on military business? Federal aviation policy will alone determine the answer to that question.

Meantime we will continue to use these columns to provide information about and to editorialize on Federal aviation policy matters so long as such policies determine the destinies of practically every branch of the flying game. We do not expect to bat 100 per cent correct but we do expect to base our opinions on facts and upon the broad concept of making the airplane available to more of our people, whether it be in the transportation of people, goods and materials or in the ownership of a putt-putt for the sheer enjoyment and sport of flying.

BUSINESS OUTLOOK

WHEREVER you go for reliable information on the current economic situation you find that the people who should know what's going on have a definite spirit of quiet optimism that business will continue to level off but remain good for several years to come. It is obvious that we are going through a readjustment period but that no serious economic depression is in the offing.

Optimistic factors in the business outlook recently reported by J. Walter Thompson Executive Arno Johnson include the encouraging statement that surplus money for discretionary spending is four times that of 1940, that today's backlog of savings is three times greater and that consumer debt is low in relation to income. Economist Sumner H. Slichter writing in the New York Times says there is a recession now but the balance of forces suggests it will not be long or severe. These facts are important to people who derive their livelihood from all phases of commercial aviation. For as general business conditions go, so goes aviation.

Far too many of our aviation enterprises which do not depend on govern-

(Continued on page 32)

The Birdmen's Perch

By *Major Al Williams*, ALIAS, "TATTERED WING TIPS,"
Manager, Gulf Aviation Department, Gulf Bldg., Pittsburgh 30, Pa.

We're great ones for precision flying.

Anyone who knows us knows that we've never done "stunt" flying, but only carefully controlled, precision aerobatics planned to the fraction of a second in timing, and to the fraction of an ounce of stick pressure in execution.

That's why we're so enthusiastic over the way lightplane owners and pilots are taking up efficiency racing.

Anyone can wind up the fan and roar around the countryside at full throttle and empty head. But when the boys and girls investigate the best speed *at the best fuel consumption*, we think they deserve a pat on the back . . . in addition to the figurative one they give themselves by becoming better pilots.

So will you participants and operators who are running efficiency races let us hear from you? Tell us about the rules, the conditions, and the results of such regattas in your neighborhood.

We'll pass the word along to other fliers, in the Perch, so that efficiency races will spread around and help make more pilots better pilots.

It'll let us remind the mob how efficient Gulf Aviation Gasoline is, too!

NON-FRICTION

When two surfaces meet, there's friction.

Every man-jack of us at Gulf—engineers, technicians, chemists, and hundreds of others—is busy figuring out better ways and means of preventing friction. We design lubricants to keep surfaces from meeting on Diesels, turbines, gears, bearings, and farm machinery.

We're proud of all of them.

But we think that one of the finest friction-preventers ever made is the one we make for your lightplane engine!

We're talking about Gulfpride Aviation Oil—Series D—naturally, the oil designed specifically to prevent surface-to-surface contact in horizontally opposed aircraft engines. This detergent, dispersent oil is the only lightplane engine oil in the world that has had extra nonlubricating impurities removed from it by Gulf's exclusive Alchlor Process.

If you want to see how many operators and owners are eliminating stuck-ring-and-valve worries, how they're extending overhaul periods to over 1000 hours . . . have yourself some Gulfpride Aviation Oil—Series D!

LITTLE KNOWN FACTS DEPT.

Stop throwing spitballs across the hangar, please. Let's get on with the Perch's hall of higher learning, The Little Known Facts About Well Known Planes Dept.

Membership (in case you came late) is achieved by sending us a L.K.F.A.W.-K.P. that's startling enough to pass our high critical standards and be used in this column. If your Fact is that good . . . *and if you send proof with it* . . . we send you a handsome, looks-like-it-was-engraved commission as Perch Pilot (bottom rung). Your fifth Fact gets you promoted to Senior Perch Pilot, an experience at least as exciting as finding gold nuggets in your back yard!

Robert Osborne, Jr., of Erlanger, Ky., sent us proof that:

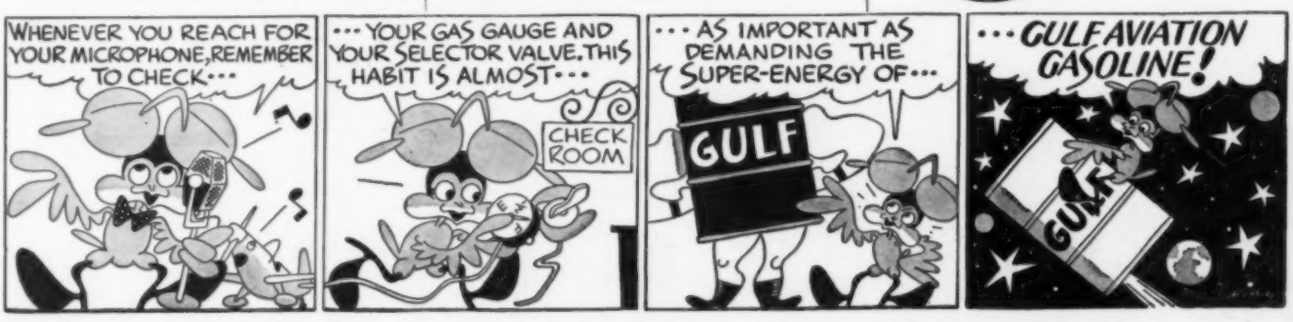
"The carrier-operated, single-seat AM-1 when loaded and armed weighs more than a DC-3!"

Your Commission is on the way, Bob.

Now how about the rest of you? The address is up on top, there.

Gulf Oil Corporation and Gulf Refining Company . . . makers of

GULF **GULF AVIATION PRODUCTS**


WHENEVER YOU REACH FOR YOUR MICROPHONE, REMEMBER TO CHECK···
··· YOUR GAS GAUGE AND YOUR SELECTOR VALVE. THIS HABIT IS ALMOST···
CHECK ROOM
··· AS IMPORTANT AS DEMANDING THE SUPER-ENERGY OF···
GULF
··· GULF AVIATION GASOLINE!
GULF

We utilized updrafts on windward side of slopes. Spire at left off wing-tip is at 12,200-ft. elevation near Creede, Colo. Lake above is 7,500 ft. up the slopes near Pinedale, Wyo. In canyon at left below is some of country's finest big game hunting between Jackson and Cody, Wyo.

—(SOUTHERN FLIGHT Phot s.)

We Fly the HIGH Way

By TOM ASHLEY

WESTWARD we flew, scooting low on the deck in our flight away from Texas' June heat to search for tall horizons and cooler climes. Six days away from the office would be too brief to go anywhere by auto. But it was ample time in Ryan Distributor Les Bowman's new Navion to cover lots of country and still loaf a couple of days in the mountains while taking trout from icy streams, spotting elk, big horn sheep, moose, deer and antelope with glasses. To say nothing of sleeping under blankets.

Summer was baking the prairies as we stayed low out of the head-wind. Drought areas doomed to become deserts were sprouting healthy bunch grass from recent rains and the sand lay still in the mounting westerly blow. Past Abilene, Big Spring and Guadalupe down into Salt Flats we cruised, nonstop for an early lunch at El Paso. This was Sunday morning and we could go and do as we pleased, just so we were back home come Friday. No schedules and no itinerary to slave over; we'd simply start at the Mexican border and wind our way north along the Continental Divide through New Mexico, Colorado and Wyoming. Wearied of summer's heat, it was to be the high country for us.

Encountered at only 7,000-ft. elevation in Western New Mexico down near Lordsburg, the Divide was easy going. But farther north it would lose itself mid great peaks, snowfields and even glaciers—big country was where we wanted to go, bigger than anything we'd ever become intimate with. In our first canyon we tensed. But Host Bowman flew with convictions based on no telling how many hours of mountain flying, having only recently operated his Navion off ridges

We fished off the runway (left) in Roaring Fork River at Glenwood Springs, Colo., elevation 5,900 ft. at airport (trees at end of strip hide river). Snow scenes below were photographed in Northern New Mexico (left, at 12,000 ft. altitude) and Colorado (right, at 14,000-ft. altitude).

—(SOUTHERN FLIGHT Photos.)

Big antelope were more numerous than cattle on 7,000-ft. sage-covered Wyoming plateau near Rattlesnake Mountains. Shadow identifies plane as Navion and shows flaps were down and only two of us were flying. —(SOUTHERN FLIGHT Photo.)

Flying vacationers find plenty of places to go and things to do in the big Rockies

as high as 11,200 ft. up in the Rockies. As we flew from range to range, our mountain flying became a common-sense utilization of air currents — a series of ups and downs, each consisting of climbing with updrafts for ten minutes or so, followed by three to five minutes of cruising over the peaks with adequate clearance for safety, then gliding down on the other side. We were to land on a wide variety of airports and strips, totaling nearly two dozen in number. On the slopes it was always an uphill landing and a downhill take-off, generally with a tail-wind going in.

Our first turf field was atop White Water Mesa at an elevation of 5,600 ft. on the edge of the Mogollons Mountains one hour west of El Paso. Shown on the map, it is a smooth, safe, mile-long pasture with a windsock and a lonely tied-down Luscombe. Nothing else, except Rancher W. E. Lipsey's bachelor home across the fence. Miles from nowhere, he has welcomed pleasure fliers for the last 25 years, showing them popular dude resorts down in the valley where arrangements can be made for trout fishing, bear, deer, turkey and antelope in season.

Back in the air, we crossed over tall timber to let down in the vast Plains of San Augustin and detour around

Three of the many fields and strips we liked are Glenwood Springs, Colo., (top), Lander, Wyo. (middle) and Creede, Colo. (bottom). All are very near excellent vacation facilities and have clear approaches. Creede is highest, at 8,700-ft. elevation. Glenwood Springs is at 5,900 ft., Lander is at 5,550 ft. For best all-round airport on our trip, see page 29 for photo of Cody, Wyo., airport.
—(SOUTHERN FLIGHT Photos.)

Most difficult mountain strip we encountered was at picturesque Eagle Nest, N. M., at elevation of 8,400 ft. Turf strip is five-eighths of a mile long and is almost 100 ft. higher at top than at bottom, necessitating uphill landing (shown here) and downhill take-off. With air temperature at 55 degrees, we took Navion off in 1,400 ft. within 250 lbs. of gross weight. Eagle Nest is in high Sangre de Cristo range, between Raton and Taos, and is famous for its excellent Rainbow trout fishing and cool Summer weather.
—(SOUTHERN FLIGHT Photo.)

a line of thunderheads northeast into Albuquerque, Santa Fe and Taos, crossing over into the beautiful Sangre de Cristo range at 13,000 ft. Here was our first big stuff, with snow and ice —a beautiful if awesome spectacle in the setting sun. Gliding down for our first night stop at Eagle Nest, New Mexico, we were greeted by its scenic lake 8,200 ft. up in the mountains as we rounded a canyon. Snow-capped Mt. Baldy towered over the lake behind the little tourist village and smaller slopes at the opposite end of the lake, where we found its difficult air strip—a five-eighths-mile stretch of sloping turf. Uphill strips we had seen before. But never a grade like this, nearly 100 ft. higher uphill than where we touched down below, with plenty of speed. After a comfortable night under three blankets, we found frost outside the window of Laguna Vista Lodge and a 35-degree dawn. Ben (Wigwam for short) Tepe, friendly local greeter, who had met us at the strip to drive us the three blocks down to the Lodge, took us trolling on the lake from Salty Reed's docks but a chill rain drove us off before we could tangle with the whopping big Rainbow for which Eagle Nest is famed.

Taking off at noon in beautiful 55-degree weather following the shower, we came to admire more than ever the performance designed into the Navion. At sea level it takes off over a 50-ft. obstacle in less than 875 ft. and climbs 1,000 fpm. at full gross. Calculations show that an airplane's take-off run is increased by 260 per cent and its rate of climb slashed by 80 per cent from a field such as Eagle Nest at 8,400 ft. with 55-degree temperature. Even so, we were off the downhill strip in 1,400 ft. and our 200-fpm. climb had the benefit of downhill terrain and rising air currents. These became valuable updrafts two miles away up against the steeper slopes where we climbed 900 fpm. up and over 12,000-ft. country for Alamosa Municipal Airport and some gas, afterwards to head northeast to re-enter the mountains for a landing at the little mining town of Creede, Colorado, with a 5,000-ft. turf airport at an elevation of 8,700 ft., highest strip on our junket.

(Continued on page 18)

In the center of Wyoming's famous Jackson Hole dude ranch country, Jackson Airport is a turf field with 5,000-ft. strip at 6,400-ft. elevation. At left are the rugged Tetons. Around the bend to the left are Jackson Lake and Yellowstone Park. In background are foothills leading to unexcelled fishing and hunting wilderness areas a few minutes away by air but reached only by pack horse.
—(SOUTHERN FLIGHT Photo.)

A Logical Pattern for Local Air Service

By E. H. PICKERING and BOB WEMPLE

PART II

NOT only the need for small airline service to local communities but the ability of modern single-engine airplanes to perform such service has now been recognized. The first article in this series last month established the need of the service. Since then great impetus was given to nationwide preparations for small airline operations when the Civil Aeronautics Board announced on June 5 its approval for the use of single-engine aircraft and small non-transport multi-engine aircraft in scheduled air transportation of passengers under certain conditions. In addition, the CAB said that in the course of its consideration of the so-called local feeder type of air carrier operations, "it appears that the public interest might be served by operations conducted with modern single-engine aircraft or by small non-transport type multi-engine aircraft."

CAB Approves Single-Engine Craft for Airlines

Thus there has come from the Board itself real encouragement to small communities everywhere which have not been and can not be served on any practical basis by larger multi-engine airline operations. In the Board's move there is also encouragement to operators everywhere to establish small airlines, while existing feeder airlines, operating with DC-3 type aircraft despite mail loads averaging only about 53 lbs. and passenger loads averaging less than 6 persons, are encouraged to substitute single-engine planes on some schedules at least for a trial period. Two uncertificated intra-state passenger airlines using lightplanes which already had filed applications with CAB for mail contracts are Carco Air Service (Bonanzas) in New Mexico and Val-Air Lines (Navions) in South Texas, while Purdue Aeronautics of Indiana has already applied, before starting uncertificated operations, for a certificate using Cessna 195's. In recent weeks, two holders of feeder certificates, finding it both difficult and unrealistic to inaugurate operations with DC-3's, have announced intentions of beginning single-engine schedules this month. They are Iowa Airplane Company, which has purchased seven Cessna 195's, and Central Airlines of Oklahoma, which expects to try three small planes—Navion, Bonanza and Cessna 195—before deciding which it will eventually operate.

There should and will be more applicants for small airline passenger and mail service now that the CAB has expressed its approval of single-engine aircraft and non-transport type multi-engine aircraft. Operators and communities seeking to provide this type of local feeder air service will be engaged in extensive research and studies to determine practical routes and ways and means to establish practical operations. CAB hearings will provide valuable information as applicants seek to prove convenience and necessity and establish themselves as being fit, willing and able to operate. In the process facts will be developed to replace theories. Only after a period of actual certificated operations will it be possible for anyone to "blue print" any cut and dried formula by which a small airline may be established and operated. But until then there are many points which applicants must consider in any realistic approach to the problems involved in local feeder air service.

Use of descriptive phrases such as "single-engine airline," "small airline" and "local feeder air service" tends to oversimplify the matter. There are many factors involved in providing the public scheduled air service, whether in large or small airplanes and whether over a route with five or fifty stops. Small airline service, especially when CAB certification requirements must be met, will be a complicated business operation and charter service and flight operators who fail to recognize that point are greatly penalized from the start. Further, it will also be "big business" as compared with charter service, even though lightplanes and short routes are small indeed when compared with major trunk airlines.

Most major airlines had their beginnings as small single-engine operations. But this time small airline operations will be conducted in a vastly different atmosphere of thorough and extensive government regulation, with many changes in travel habits and commerce and trade in general and with far different aircraft performance and communications. Competitive surface travel facilities are improved and more directly challenge short haul air operations than formerly. As mentioned in last month's article today's major airlines have from the start adhered to a concept of furnishing service between metropolitan areas, whereas local air service as envisaged by small airlines today is based on a concept of providing air service between trade centers and their satellite communities.

This concept must be adhered to if local air service is to be established and operated on a practical basis. Depart from it and you become involved in difficulties which will compromise the service and defeat its purposes. For example, there is a tendency in selecting a route pattern to connect several trade centers not only with smaller communities within their respective areas but also the trade centers themselves. Unless the service to each community receives uppermost consideration, the operation fails to adhere to the concept of local air service. Community needs are the No. 1 problem—not the needs of the airline or its aircraft or its owners.

Emphasis on Flexibility

It is possible to select numerous combinations of cities and towns inadequately served by transportation and thus offering small airline possibilities. But consider first the community of interest between them. Perhaps natural barriers have caused circuitous routings placing one town in the economic orbit of a more distant city. State capitals usually have a community of interest with every city in the state as well as with Washington and major cities. Chambers of Commerce can provide useful data in determining community of interest in trade areas. So can hotel registrations, bus and train schedules, wholesale distributing firms, public utilities.

But after you have selected a route pattern, consider the essential factors involved. You will not, for example, want to take the through passenger the long way around a "dog leg" pattern just to accommodate an intermediate

(Continued on page 20)

Appell Drilling Co. Navion lands on road (top left) to instruct bulldozer to clear 1,000-ft. landing strip next to rig (center). Loaded at distant warehouse by Pilot Bill Poole (bottom) it flies to derrick (above) with supplies.
—(Ryan Photos.)

Navion in t

THERE isn't a harder working piece of machinery used by the Appell Drilling Company of Alice, Texas, then their Ryan Navion, which is operated as a cargo and personnel transport to service oil well drilling operations in widely scattered areas. Appell crews are as used to traveling by Navion in and out of rough oilfield country as they formerly were to truck and Jeep travel.

In many cases a bulldozer clears a small landing strip 1,000 ft. long alongside the drilling location unless

Landing on improvised strip (top) and take-off (center) become practical with Navion short-field characteristics and nose-wheel. Over 200 landings were made here. Drill bits flown in (bottom) weigh 75 lbs. each.
—(Ryan Photos.)

in the Oilfields

a pasture or oilfield road is available close by. Night landings and take-offs are necessary at times to fly in parts and supplies and keep the big rigs in action without a shutdown. Pilot Bill Poole, long-time pilot and oilfield tool pusher, figures that about 85 per cent of all his operations are in and out of isolated, unimproved places where there's no more than a thousand feet of open ground. He praises the Ryan's nose wheel and short-field characteristics. The company Navion averages

(Continued on page 22)

Jamieson Jupiter is being developed in Florida as 115-hp. 3-place with V tail and resemblance to postwar Culver. Not yet certificated, enthusiastic sales literature claims for it 150-mph. cruising and 40-mph. landing speeds.
—(Jamieson Aircraft Photo.)

New Performance Promises

MORE experimental lightplanes are being announced by developers outside of the industry. Latest are a unique four-place, with fixed tricycle gear, and a high-performance three-place with retractable tricycle gear. Both are low-wings of all-metal construction. Neither is in production and neither has yet been CAA certificated for airworthiness.

Although their eventual appearance on the market is another matter, one of the experimentals already carries a so-called "guaranteed" price. It is the 3-place, announced in sales literature by Jamieson Aircraft of DeLand, Florida. Called "Jupiter," it closely resembles a metalized version of the postwar Culver Model V but has a V tail, such as distinguishes the Beech Bonanza, and is powered by a 115-hp. Lycoming. C. M. Jamieson, who announced the Jupiter, was formerly with both Culver and Beech.

The other new experimental is identified as the "Strat" by its developers, Strat Aircraft of Bridgeport, Connecticut. Its designer is Mischa Kantor, formerly with Luscombe and designer of Luscombe's postwar single-seater experimental which was never marketed. Kantor has equipped the Strat with several distinctive features in addition to the fixed tricycle gear, which are intended to minimize piloting technique as well as construction costs.

Latest 2-pl. Cessna 140 features all-metal wing greatly similar to the new wing on 4-pl. Cessna 170. Conservatively advertised cruising speed is now 110 mph., with top of over 125. It is available either with 85- or 90-hp. Continental. Ten thousand Cessnas are now in use and the firm has become the world's largest producer of personal planes.
—(Cessna Aircraft Photos.)

Questionable Claims

Of the two, the Jupiter announcement provides the most speculative descriptive data. Kantor's Strat has not yet flown and only a minimum of data was released pending further progress. But Jamieson, whose Jupiter made its first flight on February 5, 1949, has already distributed sales literature stressing remarkable performance, except for landing speed with full flaps and full gross weight, these being withheld, it is explained, "until final approval is received."

If the Jupiter will perform as Jamieson claims, it will be a remarkable 3-place indeed. Sales literature quotes Jamieson as "guaranteeing" the following: Cruising speed, over 150 mph.; landing speed, under 40 mph., and price, $2,500 FAF with "fuel and oil tanks full." Jamieson apparently anticipated that the price would be questioned, for the announcement said, "We are not fooling on the

price and have already committed ourselves to make deliveries at this figure."

In view of current costs and the lightplane industry's experiences, especially since the war, Jamieson's price should be questioned. The 115-hp. Lycoming he specifies is also used in the new Piper Clipper, which weighs 850 lbs. empty as compared with the Jupiter figure of 800 lbs. empty. The Piper is constructed of tube and fabric and the Jupiter is said to be all metal. Fixed gear with tailwheel are on the Clipper but Jupiter has electrically-operated retractable tricycle gear. The industry wonders how Piper can sell the Clipper at $3,000, yet Jamieson is quoting under that figure on an experimental which is yet to be licensed, which incorporates more costly features and for which much greater performance is claimed. Compared with other planes on the market, Jamieson's claims are even farther out of line—so much so that they are naturally to be doubted when considering current costs for engines, propellers, landing gear, wheels, instruments and other essential purchased items.

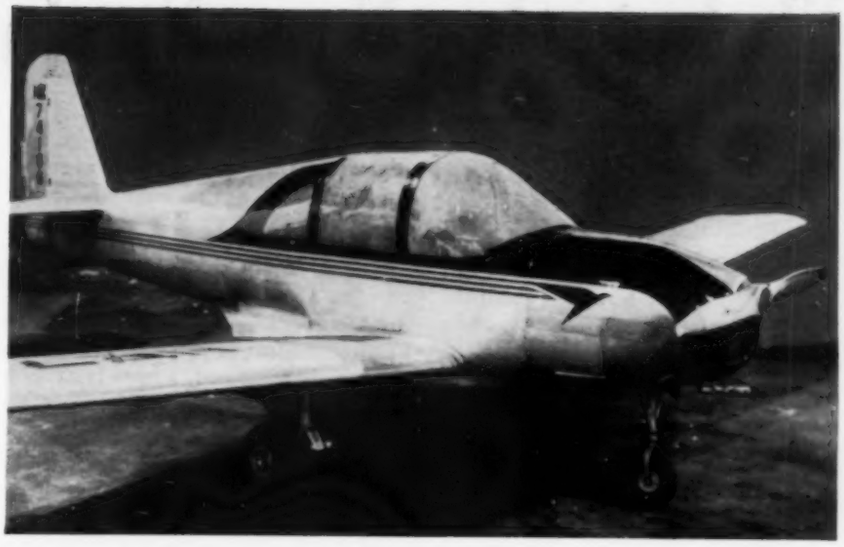
Kantor's 4-Pl. Strat

Kantor's unique 4-place has not yet flown but is said to be ready for flight-testing soon. It is powered by a 150-hp. Franklin and is expected to weigh about 1,250 lbs. empty, which is lighter than comparable 4-place lightplanes now on the market. Design goals include a 135-140-mph. cruising speed and a 600-mile range with four persons, 80 lbs. of baggage and 20 gals. of gas in each of two 20-gal. rubber pliocel wing tanks. Span is 35 ft., length 23½ ft.

Kantor has sought in simplified construction an approach to low-cost manufacturing and flying "without spending millions of dollars" on design and tooling.

Design features include a cradle engine mounting as part of the fuselage structure, described as a continuous member comprising the entire center structure of the cockpit. Instead of working in suspension, the engine operates on top of a supporting member and keeps vibration at a minimum. Lack of cockpit "gadgets" is stressed for the fixed-gear Strat, which also features pedestal controls.

Front seats of the Strat are said to be convertible into a bed at the touch of a pushbutton "for cat-naps and overnight sleeping accommodations for sportsmen and travelers in isolated areas" and for flying litter patients when using the ship as an ambulance plane. Cockpit and door arrangement is aimed at simplifying loading and unloading of cargo. ★ ★ ★



New 4-pl. all-metal Strat under development at Bridgeport, Conn., has 150-hp. Franklin, fixed tricycle gear and is expected by Designer Mischa Kantor, formerly with Luscombe, to cruise at 135-140 mph.

—(Strat Aircraft Photo.)

Latest views of Koppen-Bollinger Helioplane being perfected in Boston show steep take-off and wing's high-lift devices, including full-span flap and leading edge slat. Helioplane has 85-hp. Continental and is said to cruise at 100 mph. with ability to fly at 27 mph. without stalling. Take-off in 300 ft. over 50-ft. obstacle is claimed.

—(Helioplane Corp. Photos.)

Flying the New Navion

Ryan's attention to details makes the 150-mph. Navion outstanding

By BOB WEMPLE

FLYING the 1949 Ryan Navion was an experience with lasting impressions—not so much of any certain feature but of the manufacturer's attention to many details of refinement to a basic design. What has been capitalized on in the new Navion is more power, less drag, more comfort and less noise. There are other refinements but these standouts have given it significant finishing touches where they contribute most to satisfactory performance and pride of ownership. Just as Ryan advertises, it is a 150-mph. airplane with ideal short-field characteristics.

Before our cross-country in the improved model, we had a brief demonstration by Distributor Leslie H. Bowman, who showed us the airplane's ease of taxiing with minimum power, short take-off with flaps and a couple of power stalls. Cabin quietness achieved in the new model was something to appreciate. It is the quietest single-engine cabin of our knowledge and experience, thanks to improved soundproofing as well as exhaust mufflers and relocation of exhaust stacks. As always, the Navion gives ample warning of the approaching stall by a pronounced buffeting similar to that of most heavy aircraft. This buffeting appears well before the actual stall. Even after all this buffeting, positive back pressure on the controls is required to completely stall the Navion. We don't see how anyone could ignore all that buffeting and get into trouble. In stalls, the Navion is a remarkable performer with not a single deficiency. With power on, it stalls at 56 mph. in the clean condition but at 52 with gear and flaps down. With power off, it stalls at 58 clean and at 54 with gear and flaps down.

Ryan's attention to little details may be found in the new Navion's use of a knob resembling an airplane wheel for the cockpit gear control and a knob resembling a little airfoil for the cockpit flap control. To make flap control even more precise, Ryan has painted a take-off marker on the flap in the left wing and a small light in the wing illuminates the marker for night flight. There are other numerous accommodations, most of which have been covered already in this magazine's previous issues. They include relocated ash trays, elbow-room recesses for rear-seat occupants who may also increase their comfort by using a folding center-seat arm rest, a head rest, folding seat backs for access in flight to the baggage compartment and better cabin ventilation.

1,000-fpm. Climb

For our cross-country, Dealer Johnny Huett let us have his demonstrator. Two of us, with full tanks but no baggage, made the load much lighter than the Navion's 2,600-lb. gross. At 100 mph. indicated air speed we climbed 900 ft. the first minute and reached 4,000 ft. in six minutes flat. Ryan says the Navion's maximum climb is at 86 mph., which offers even more climb, but we were in a hurry and were at cruising altitude of 5,000 ft. before we remembered to use 86 mph. for the climb. In our earlier ride with Bowman for his demonstration, with three of us aboard and tanks about half full with minimum baggage, we clocked the new Navion in a 1,000-ft. climb the first minute with 86 mph. indicated air speed and with the new metal-bladed Hartzell propeller.

On our cross-country, however, we were in another new Navion, this time with the regular Hartzell blade. Our cruise setting at 5,000 ft. was 2,200 rpm. and 24½ inches of manifold pressure, for an indicated air speed of 150 mph. Outside temperature was 60 degrees. This gave us a corrected air speed of 164 mph. Using two checkpoints 90 miles apart, we calculated our ground speed at 172 mph., having the benefit of an 8-mph. cross-tail wind.

For the return trip, we selected 2,000 ft. for cruising and set our power at 25 inches of pressure and 2,150 rpm. Here again we had an indicated air speed of 150 mph. Later, while looking back on the trip, it occurred to us that we should have returned at the same 5,000-ft. altitude that we used in our outbound flight. It is advantageous to cruise at higher altitudes for more speed, especially when flying airplanes that cruise 150 mph. and faster with ample reserve to maintain a reasonable percentage of horsepower at altitude. Our flight was only about 240 miles going and coming, but even at that distance we could have saved seven minutes if we had returned at 5,000 ft. instead of 2,000. Les Bowman does a lot of cross-country flying in his demonstrator and on a recent lengthy trip averaged 160 mph. for his corrected air speed at 7,000 ft. while pulling 23¼ inches of manifold pressure at 2,150 rpm. His fuel consumption was 12 gallons per hour. On another trip, from El Paso to Fort Worth, Bowman cruised at 12,000 ft. at an indicated air speed of 127 mph. to average 10¼ gallons per hour for fuel consumption while favorable winds boosted his ground speed to 170 mph. By all means fly the "high road" if you have the equipment to do it with, and the new Navion is such a piece of equipment.

Our couple of hundred miles in the Navion allowed us an opportunity to appreciate the comfort, quietness and roominess of the new Navion. While Friend Tom was holding her in the groove on the right, we slid back to the rear seat to try out the new arm rests and head roll. We found the nearest thing to airline comfort we have ever experienced plus excellent visibility in *all* directions. The rear seat rides high, creating an illusion of being in a shallow rate of descent although we were actually straight and level with a wonderful view of the horizon up front and all around. The noise level is low enough for easy conversation between front and rear seats without even raising up from that nice head rest on top of the rear seat back. Those who go to sleep easily in airplanes will find the Navion ideal for such siestas. ★ ★ ★

Airmen's Calendar

July 17—Third Annual Breakfast Flight, Bogalusa, La.

July 17-18—Seventh Annual All-Dixie Air Show and Trading Day, Chattanooga, Tenn.

July 19-20 — NASAO Directors Meeting, Grand Hotel, Mackinac Island, Mich.

Aug. 7-14 — Southwestern Soaring Championships, Grand Prairie, Texas (between Dallas-Ft. Worth).

Aug. 24 — All-State Air Show, Woodrum Field, Roanoke, Va.

Aug. 25-28—National Flying Farmers Convention, Fort Collins, Colo.

Sept. 3-5 — National Air Races, Cleveland.

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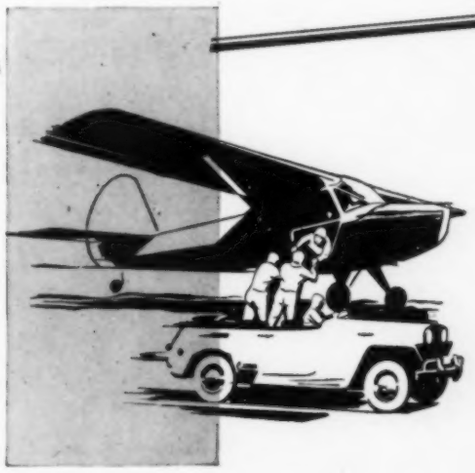

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Over 1,000 hours aloft—more distance than three times around the world—that's the new endurance record set by Dick Riedel and Bill Barris. Flying an Aeronca plane, powered by a Continental engine, and sparked by two Bendix-Scintilla Magnetos, this new record-breaking performance was completed on April 15 at Fullerton, California. Congratulations to these two outstanding pilots!

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Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

WE FLY THE HIGH WAY

(Continued from page 10)

By now the thermometer had risen to 62 degrees on the ground. Combined with the altitude, this normally would almost triple our take-off run and cut our rate of climb by about 85 per cent. Actually, however, we got off in only 1,100 ft. The difference was that this airport's favorable air currents were slightly stronger than we had found in the Eagle Nest bowl. Host Bowman held down our nose on take-off until we had a good 100 mph., then sidled over a couple of hundred yards to our right against steep canyon walls to climb aboard king-size updrafts. Altitude and temperature had chopped the airplane's climb down to 150 fpm., but we soared around the rim of the slope at eight, nine and eleven hundred feet per minute, reaching 14,000 ft. 10 minutes from take-off to top the close-in rugged peaks.

Stopping briefly at the excellent new airport at Gunnison, Colorado, we learned from Rocky Warren of Western State Aviation that charter service was picking up. No wonder. The airplane has opportunities to perform in rough mountain territory that don't exist in the flatlands. Warren and his partner are supplying a uranium mining project, for example, with air service requiring only a fraction of the time in transit that pack horses or even Jeeps would require. At Gunnison we were entering big game and big-time dude country, scenic area rated among the finest anywhere. Across rugged big tops and the Continental Divide, we let down alongside the slopes of Mt. Sopris into the beautiful little valley town of Aspen on the Roaring Fork River. A new turf air strip with unobstructed approaches lured us in despite evidences of being too rough, but the Navion's nose-wheel allowed us to stop short of the largest boulders and holes without damage. If and when Aspen's air strip is made smooth enough, it should attract much tourist flying but until then it is definitely hazardous. Taking off, we rode the updrafts up and over the canyon wall to make Glenwood Springs, 45 miles down the valley, and its beautiful and excellent airport, going into town to spend our second night of the junket beneath comfortable blankets.

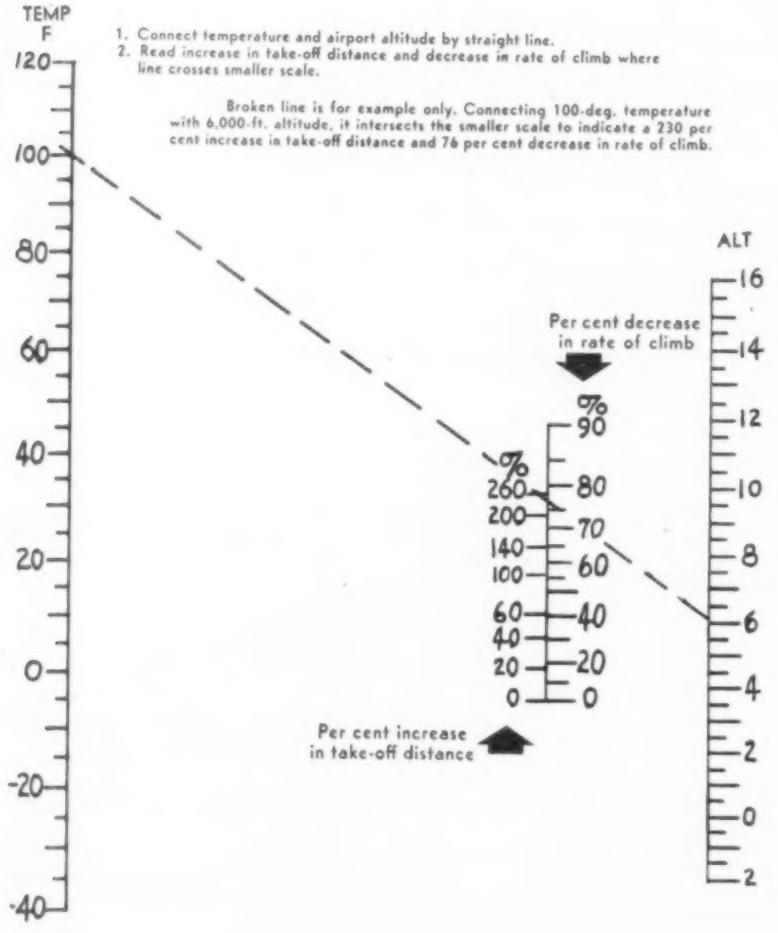
Plane owners on the go should visit Gunnison and Glenwood Springs by all means. They have too many attractions to list here but airport operators will go out of their way to introduce visitors to everything. By all means the flying visitor should rent a Jeep or auto and tour the many, many scenic areas nearby. This is big country at its finest.

Our third morning out found us flying northwest into Wyoming through barren badlands via Rock Springs to re-enter the high Rockies near Pinedale, which has a valley airport without obstructions. Nobody was home so we went on, but later we learned its office door is never locked and there is a note instructing visitors to use the telephone to call the airport operator downtown. This is actually a good deal. Airport Operator Roland Berry will arrange pack trips for visiting airmen who can fish nearby Fremont Lake, up the slope at 7,500 ft. elevation, for Rainbow which grow as large as 30 lbs. and more. Farther up the slope behind 13,787-ft. Gannett Peak are hundreds of small lakes on the 10,000-ft level, famous for their California Golden trout. We had heard of the lakes and climbed the slopes in the Navion to have a look. From what we saw, there's no better mountain scenery and fishing anywhere than right here. Nearby accommodations are plentiful.

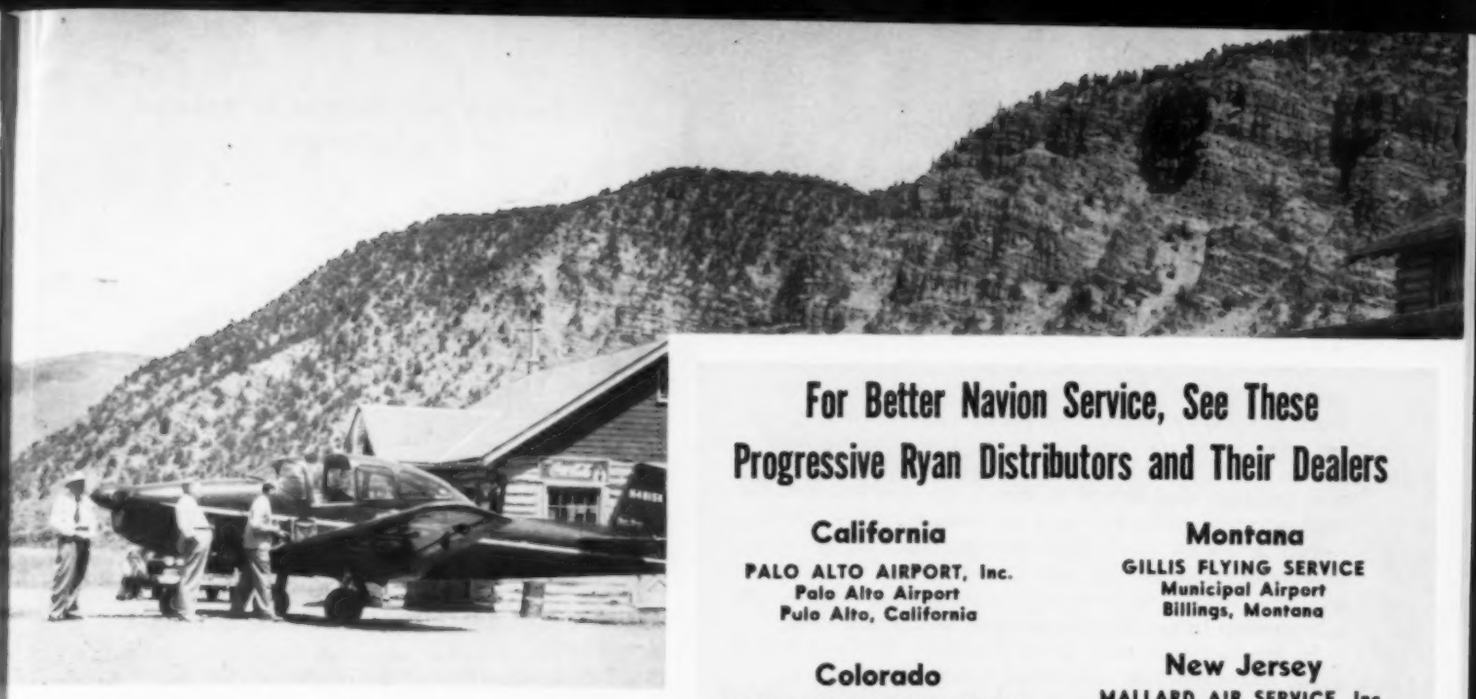
Banking into the Northwest again, we found Jackson Hole and its big turf airport at the base of the mighty Tetons, with Jackson Lake in the background and tremendous Yellowstone Lake around the bend. Here in a vast bowl at the gates of West Yellowstone National Park is the nation's greatest dude ranch center and, in surrounding mountains, its greatest big game hunting area. Thunderstorms were in the East among the peaks but we climbed toward them along Pacific Creek into the heart of the big game country. The storms were practically stationary, with plenty of clear areas for flying.

As we topped ridge after snow-capped ridge, finally leveling off at 12,500 ft., a great panorama of wilderness unfolded beneath our wings. Protected by the government against highways, ranchers, and human habitation, here were great valleys, heavily timbered along sheer rock cliffs and ribboned with countless streams and

(Continued on page 25)



CAUTION WHILE FLYING FROM AIRPORTS AT ALTITUDE is necessary for all pilots. Here's the CAA's "Koch Chart," named for Al Koch who originated it, which is easily used to indicate altitude-temperature effects on performance. Clip this chart and keep it in your airplane. All you need to use it is a straight edge and knowledge of your plane's take-off and rate of climb at sea level in standard air (temp. 59 degrees).



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ST. LOUIS FLYING SERVICE
Kratz Airport
St. Louis, Missouri

Montana

GILLIS FLYING SERVICE
Municipal Airport
Billings, Montana

New Jersey

MALLARD AIR SERVICE, Inc.
Teterboro Air Terminal
Teterboro, New Jersey

New York

BUFFALO AERONAUTICAL CORP.
Hangar 1, Buffalo Airport
Buffalo, New York

North Carolina

CAROLINA AERONAUTICS, Inc.
Meyer Airport
Hendersonville, North Carolina

Ohio

SOUTHERN OHIO AVIATION CO.
Dayton Municipal Airport
Vandalia, Ohio

Oklahoma

PAGE AVIATION SERVICE
Municipal Airport
Oklahoma City, Oklahoma

Pennsylvania

AVIATION CONSULTANTS, Inc.
Reading Municipal Airport
Reading, Pennsylvania

Texas

GENERAL AERONAUTICS, Inc.
Meacham Field
Fort Worth, Texas

Washington

WASHINGTON AIRCRAFT & TRANSPORT CORP.
Boeing Field
Seattle, Washington

RANKIN AVIATION INDUSTRIES
Pearson Airpark
Vancouver, Washington

Mexico

MORGAN & WALTZ, SUCS., S. A.
Monterrey 101-410
Mexico City, Mexico

Puerto Rico

DORADO AIRFIELD
Dorado, Puerto Rico
(Branch Off.: International Terminal, San Juan)

LOCAL AIR SERVICE

(Continued from page 11)

town with a useless stop. On the other hand, neither will you want to neglect an intermediate town with one passenger just because your schedule is filled to capacity to the town beyond. There are many problems involved and some of them, such as this one, can be solved by considering the system as two or more separate routes.

Emphasis in small airline service will always be flexibility in scheduling. Lightplanes such as postwar 4-5-place models provide this flexibility if they are operated effectively to meet small town needs. This points up the absolute need for experience and know-how in lightplane operations. Going further, public service under government regulation demands that lightplane experience also be combined with air transport background and business ability. Though "small airline" is the correct description of the operation, it requires exceptional business ability to handle the financing, maintenance, flight operations and public relations and salesmanship to perform the kind of service demanded.

So you want to start a small airline? Don't overlook sound financing. The odds are all against a shoestring venture, even though the use of lightplanes might encourage some to try it. Steady day-by-day operations, even over the simplest route system, demands a substantial investment with adequate capital to meet all contingencies. Traffic is usually slow to develop and is seldom found anxiously awaiting the start of a new airline. If it's there, it has to be sold through top-notch salesmanship and, importantly, on the basis of safe, dependable, courteous, convenient service.

All too frequently over-enthusiasm fails. Somebody produces optimistic and unrealistic figures on costs and

(Continued on page 22)

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  Drew Field — TAMPA, FLORIDA
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  Stinson Field — SAN ANTONIO, TEXAS
- **Parks Aircraft Sales & Service, Inc.**
  Port Columbus — COLUMBUS, OHIO
  Municipal Airport — KANSAS CITY, MISSOURI
  Palwaukee Airport (Wheeling, Ill.) — CHICAGO
- **G. E. PENN**
  Gregg County Airport — LONGVIEW, TEXAS
- **J. D. REED CO., Inc.**
  Municipal Airport — HOUSTON, TEXAS
  Love Field — DALLAS, TEXAS
  New Orleans Airport — NEW ORLEANS, LA.
- **Roscoe Turner Aeronautical Corp.**
  Municipal Airport — INDIANAPOLIS, IND.
- **SOUTHWEST AIRMOTIVE**
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- In strict accord with CAA and Beech specifications, factory-trained personnel directs more than 140 individual aircraft and engine checks to complete a single 100-hour inspection. Special equipment and special know-how assure you of a very special margin of safety when you take off for that next flight.

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Wherever you see the certified Beech sign, you may be assured of super service on the flight-line. Courtesy and consideration are the keynotes whether you are in for an overhaul or just stopping by for a cup of java.

LOCAL AIR SERVICE

(Continued from page 20)

projected revenue, attempting to show that income and a small investment will meet expenses in financing the purchase of planes, hiring of personnel on small salaries plus stock interest and the like. But once actual operations begin, revenue proves disappointing. Another demand is made on the investors, who remain optimistic. Eventually, as in any business, final accounting brings out a long list of costly mistakes chargeable to lack of experience and having to learn the hard way. Most of them could have been avoided through sound planning and realistic consideration of management and operating costs and problems.

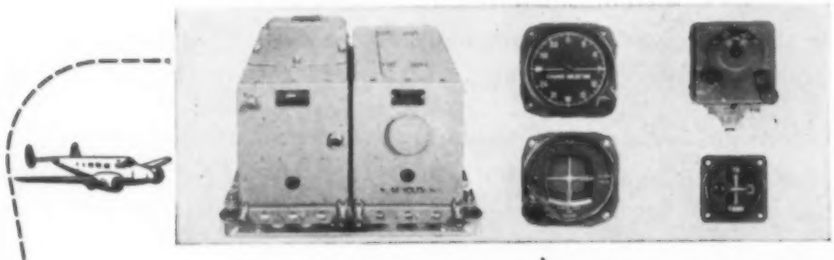
There will be fewer investors ready to risk money in a venture submitted to them with facts instead of optimistic theory. But they will meet the challenges more successfully if they recognize all of the facts from the start. We know of a small airline which began operations only recently. The group behind it thought a $5,000 kitty would be sufficient "just to see if it looks like a good idea." Naturally it wasn't enough. But it did develop some traffic over a very promising route system. From any realistic view the possibilities were definitely encouraging—but not to those who had over-optimistically jumped into the little venture without regard to facts. So did operating costs, even though they were fully 70 per cent above the predicted figure. Actually, a sound little airline can probably be built over that very route. But the original attempt fell flat. Prominent citizens who were identified with the failure will discourage any future attempts to improve on it. To hear them tell it, they became "experts," and their free advice now runs like this: "No more for me, it cost me a thousand bucks to learn it can't be done."

If you find yourself, after soundly planning a small airline based on dependable lightplane and operations experiences and management background, saying "it will take $50,000 to do the job right but we can start on $20,000 and see how things go," you're getting desperate for a job—not for an airline.

When you select a route to establish a small intra-state airline for local service, you are essentially launching a fact-finding operation—not to make a fortune at the outset but to support an eventual application to the CAB for expanded inter-state service on a scale much more capable of earning returns through the performance of local mail and passenger service. Operating even a small intra-state airline requires records and accounting, maintenance, scheduling and utilization of equipment, promotion, sales, traffic handling, training and attention to many details. Too many operators are prone to view such a small airline operating over familiar terrain as requiring hardly more than filling the fuel tanks, leaving at certain hours and arriving at certain times. That kind of thinking will do more to retard local air service than any factor.

Although an intra-state airline is not required by the Civil Aeronautics Act of 1938 to do it, the operator will find it valuable and essential to his own success to maintain records sufficient to compile operational and accounting data exactly as required by the CAB in its "Uniform System of Accounts for Air Carriers." Such necessary forms as loading manifests, flight logs, passenger manifests, maintenance reports, clearance and weather reports, station agent reports, expense accounts, petty cash accounts and the like can be extremely simple and many of them consolidated into one report so that they will not become too burdensome. The big point is that the data they provide is essential if your case is to be built on facts for eventual presentation to CAB in seeking certification.

(Editor's Note: This series on local air service will be continued in next month's issue of SOUTHERN FLIGHT.)



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The Type 15B VHF Navigational Receiving Equipment (illustrated) provides for reception on the new Omni-Directional Ranges as well as operation on both types of VHF Runway Localizers, and the VHF Visual-Aural Airways Ranges. Simultaneous voice feature is included on these ranges. The *tunable* A.R.C. Receiver permits selection of any VHF aircraft frequency.

The A.R.C. Type 17 or A.R.C. Type 18 is the companion communication equipment normally associated with the Type 15B. The Type 17 VHF Communication Equipment adds independent two-way VHF communication facilities. The Type 18 adds VHF Transmitting Equipment only. All Type 17 and 18 units are type-certificated by the CAA.

The dependability and performance of these VHF Communication and Navigation Systems spells increased safety in flight. Specify A.R.C. for your next installation.

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DEPENDABLE ELECTRONIC EQUIPMENT SINCE 1928

OILFIELD NAVION

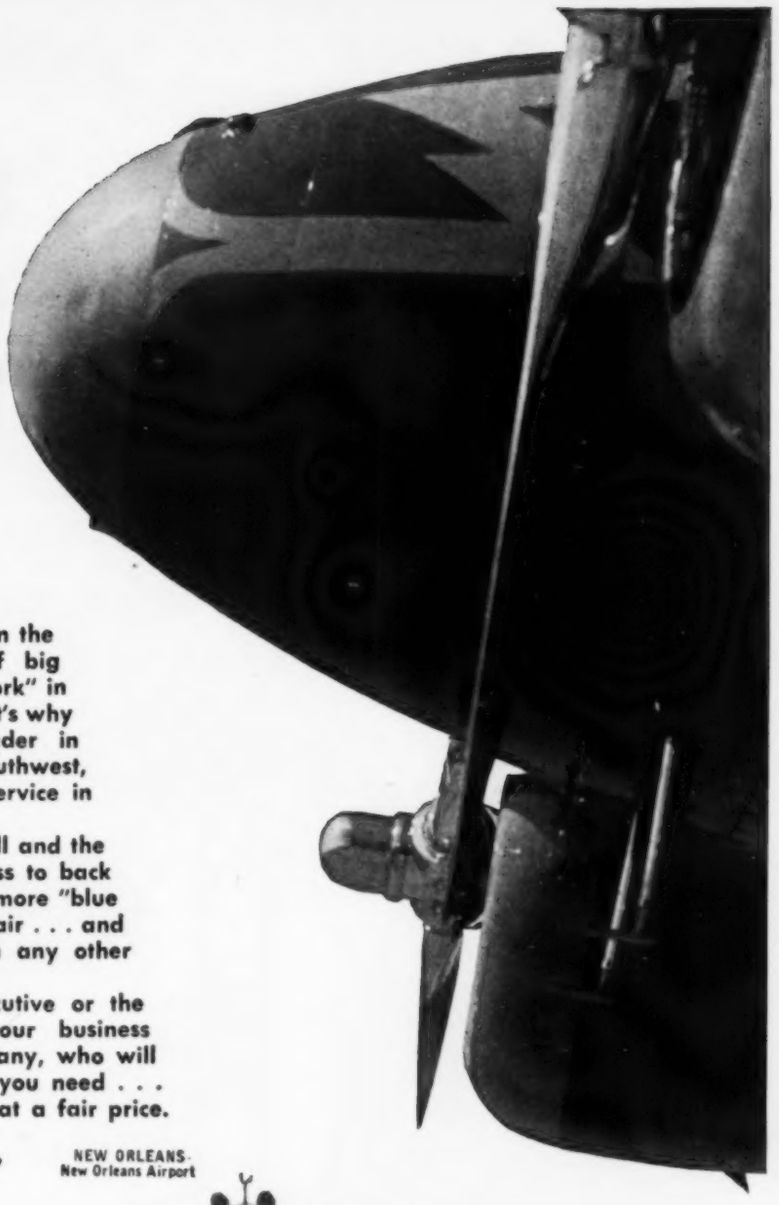
(Continued from page 13)

50 hrs. or more of flying monthly, not only transporting personnel and supplying parts and crews to rigs but occasionally searching the countryside for overdue or broken-down trucks carrying badly needed pipe. A few minutes by Navion saves hours by truck in reaching trouble spots and landing on scene to expedite matters.

But there's another approach to the Navion's usefulness — recreation for hard-working personnel who use it. When White Wing, a favorite game, are in season they can be hunted only between 4 p. m. and sundown. "In the Navion we are able to hunt a 150-mile area in a single evening," comments Pilot Poole. The Navion has built up an impressive backlog of goodwill for the company with clients and prospects who go along as guests on flights as far away as interior Mexico — Wherever hunting and fishing are best.

Appell officials, as do other oil industry executives, praise the versatile usefulness possessed by the 150-mph. Navion, which Appell accountants describe as costing only about $5.38 per hour to operate for such items as gas, oil, repairs and storage. That's as cheap as autos cost in the oil country. ★★★

Big Business Puts it's Money On This Nose!



Check traffic in the air for more profits on the ground and you'll find that more of big industry's successful executives "fly to work" in Beechcrafts than any other airplane. That's why J. D. Reed Company, long-time leader in aircraft sales and service in the Southwest, chose Beech for distributorship and service in America's busiest spot.

With the best product in the air to sell and the most complete service in the business to back it up, J. D. Reed Company has put more "blue chips" of American business in the air . . . and kept them safely there . . . than any other organization in aviation today.

Buy the Twin-Engine Beech Executive or the 4-place Beech Bonanza, as your business requires, from J. D. Reed Company, who will back up sales with the service you need . . . when and as you need it . . . at a fair price.

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AUTOMATIC PILOT and FLIGHT PATH CONTROL

Typical of the performance of this equipment is the remarkable story that is brought to light by the experience of Randy Mulherin, Chief of the C.A.A.'s Flight Inspection Division. In 21 months, pilot Mulherin logged over 800 hours of actual flight time with the PB-10 Automatic Pilot and Flight Path Control. Flights were made in every kind of weather down to an official 100 ft. ceiling and ¼ mi. visibility, including severe icing conditions. In all, 700 landing approaches were made—*not a single one was missed*—not one "go around" was necessary. Maintenance? It amounted to only 1.8% of the total time in operation—and it was preventive maintenance at that!

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AVIATION CORPORATION

LOOK FOR THE PIONEER MARK OF QUALITY

REG. U. S. PAT. OFF.

WE FLY THE HIGH WAY

(Continued from page 18)

marshes. Abundant moose, bear, elk, deer and big horn sheep are found in this undisturbed primitive paradise. Fly in and out of these lofty ramparts and you feel hundreds of miles removed from civilization. We let down into a canyon to follow the Shoshone River to the Big Horn Basin. Host Bowman pointed to his Summer home in the canyon and to a neighboring ranch, the Triangle X, where we would be guests of the Siggins Brothers for two days.

A rain storm blocked the opposite end of the canyon so we climbed the steep walls on updrafts and searched the high ridges for big game. Incredibly we found two large herds of elk, a couple of extra-large big horn sheep, deer and scores of antelope—all within the very brief span of 3 minutes. After leaving the Navion at the modern airport in Cody, Wyoming, 40 miles away, we mentioned the rams casually to Don Siggins back at his ranch and he jumped three feet. Don's been guiding big game hunters into the mountains since he was a boy and has never

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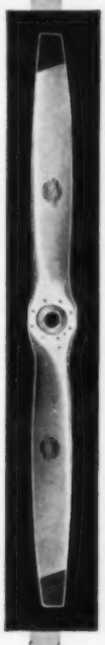

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CAA approved and available immediately for most airplanes powered by Continental 65-145 H.P., Franklin 150-165 H.P., and Lycoming 100-108 H. P. engines. Ask your dealer for complete information or write for free folder on Met-L-Prop, the FIRST AND FOREMOST METAL PROPELLER for personal planes.

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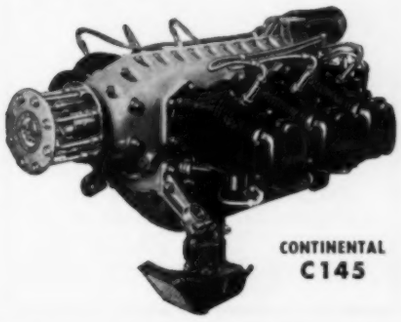
Flying Costs Less than Driving

On a recent round-trip business flight from the Midwest to the Pacific Coast, — some 4,000 miles in all — careful record was kept of all expenses. The figures showed that in this case, as in countless others, the cost of the journey was far lower than if it had been made by car. Actual money saving amounted to about one-third. When you add to this the time saved, and consider the greater comfort of flying, you begin to understand the increased use of personal and executive type planes. Have the Continental dealer at your airport tell you how easy it is to "Start Flying Now".

WHEN YOU NEED SERVICE — CONTINENTAL HAS IT

When you choose a Continental-powered plane, you get the backing of a service network as far-flung, and as competent, as the service organization behind your car. There are Continental service and parts at almost every airport in the free countries of the world.



CONTINENTAL C145

More Power For You

Here's the 6-cylinder 145 h.p. engine that is powering a number of 4-place personal and executive planes. The introduction of the C-145 was another phase of the long-range Continental Motors program of building the engines that meet the needs of the aircraft manufacturer — and user.

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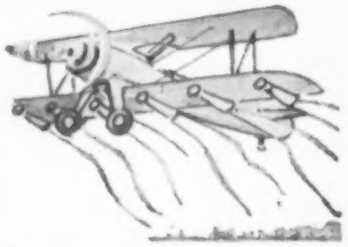
"100% Kill . . . No Plugging or Trails"



High praise for Burnum Venturi Spray Systems comes from E. P. Stubblefield, Vice President, Rainbow Dusters, Inc., Los Animas, Colorado, as follows: "We have found our Burnum Venturi Spray unit more than met our expectations. We had 100% kill using DDT and Clorodane. With Clorodane we have had good grasshopper control. 2,4-D on wheat and corn is also sure-fire for weed spray with this unit. Maintenance is minimum with no plugging or trails. We sincerely recommend the Burnum Venturi Spray System."

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You, too, can do the job better with our units, available in handy kit form, fully-approved by CAA. We also stock Stearmans modified into combination duster-sprayers. Send for particulars today.

10 *Exclusive Features*

1. Cockpit control in flight for start-stop and metering up to 50 gals./min.
2. Venturi action eliminates pumps, giving automatic force-feed.
3. Perfect droplets at all times, eliminating fogging.
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6. All parts installed and operated without structural changes.
7. Light weight. System weighs less than seat, panel, etc., which are removed.
8. Shipped in complete kits with all parts, fittings, instructions.
9. Fully approved by CAA and in use in many states and Mexico.
10. Easily installed by two A. & E. mechanics in only 2 days.

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found sheep without two or three days of arduous climbing.

Several ranches are operated in the Big Horn by Don and his brothers, Ray and Harold. On one of them, the Triangle X, they maintain excellent cabins with all conveniences for a limited number of guests with reservations in the Summer and big game hunters in the Fall. Pack trips, both Summer and Fall, are the highlight of a visit there. To pack a party of four guests back into the wilderness requires a train of 16 or more horses, with cooks, wranglers and guides. They carry a complete portable camp, with tents, bedding, stoves (baked cakes are even prepared in camp along the trail) and supplies. Minimum trip lasts 10 days, six of which are for packing in and out with four days for hunting, but most pack trips are 14-day affairs. For those who want unexcelled big game hunting or Summer mountain fishing, there could be no finer way to enjoy ten days to two weeks. Plane owners will find the Cody airport (elevation 5,084 ft.) with its 5,000-ft. and shorter oiled runways, hangar storage and outstanding service, not only acceptable but praiseworthy. Notified by telephone, Don Siggins meets arriving planes.

Taking out for home on our fourth morning, we headed back via the Eastern Slope to investigate reports of good lake fishing near Riverton, Wyoming. Scores of boats were on the lake, far out in desert flats, but at the airport we learned they were catching mostly crappie. Lander, Wyoming, was one place we had to see, so we retraced our steps to re-enter the mountains just north of Lander for a look at some of the most beautiful high-elevation lakes to be found anywhere. Gliding back down the slopes for a landing at the Lander Airport, we enjoyed a brief visit with the operator. We should have stayed longer here, on the edge of one of the most interesting big mountain areas in the U. S., and having an excellent turf airport with no obstructions and plenty of runway length. By Navion just a few minutes away are large numbers of glaciers. Peaks reaching 11,000 and 12,000 ft. are a dime a dozen. Below them are glacier-fed and spring-fed lakes by the scores—fabulous fishing country where the angler can pack in by horse to enjoy catches the likes of which few privileged sportsmen can match.

Cruising homeward with regrets over leaving Lander so soon, it wasn't long until we struck what must undoubtedly be the greatest antelope country anywhere. We jumped them

(Continued on page 32)

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Complete with Range and Beam Receiver, Entertainment Broadcast Receiver, 75 mc. Marker Beacon Receiver, 3105 KC Transmitter, and Rotatable Loop Direction Finder. $292.50 list value— **Special $89.95**

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NEW interior styling! Fine upholstery, beautifully tailored. Harmonizing color schemes. Deep luxurious, roomy comfortable seats.
140 M. P. H. TOP SPEED—145 H. P. Continental Engine. Over 500-mile range. Wide doors. Wide seats! Wheel pants optional.

Best Way to Raise Your Pay

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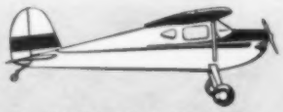
Cessna 170

THE RAISES—THE COMMISSIONS—THE PROFITS go to men *who get things done!* So move *fast* the easy way in your own 4-place Cessna 170! (And help "key men" get more done, too . . . by equipping *them* with modern transportation!) You travel at a comfortable 120 m. p. h. You're free of schedules and connections. You can contact *more* customers, visit *more* markets, trouble-shoot *more* places . . . with *less* fatigue, more time at home! Easy to fly! Surprisingly inexpensive to operate. And wonderful for family vacations, of course! You'll soon be using your new Cessna 170 as casually as you would a car!



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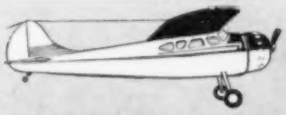

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Let a Texaco Aviation Representative give you the whole story for greater maintenance efficiency and economy. Just call the nearest of the more than 2300 Texaco Wholesale Distributing Plants in the 48 States, or write The Texas Company, *Aviation Division*, 135 East 42nd Street, New York 17, N. Y.

TEXACO

TEXACO Lubricants and Fuels
FOR THE AVIATION INDUSTRY

VOL. XI, NO. 5 JULY, 1949

Modern AIRPORTS

THIS MONTH'S MODERN AIRPORT is Cody Municipal in Wyoming's Big Horn Basin at the gateway to Yellowstone National Park. Managed by Lawrence J. Siddle, it has three oiled runways of 5,000 ft., 3,700 ft. and 2,700 ft. length. Elevation is 5,084 ft. Ample storage is always available with excellent service and the field has one of the best restaurants in the West. SOUTHERN FLIGHT staff on a visit (see "We Fly the High Way," page 8) found this an outstanding airport. —(SOUTHERN FLIGHT Photo.)

In This Issue

Low-Cost All-Weather Airport for Small Towns - - - - - - 30

Questions and Answers for Airport Operators - - - - - - 30

One of three 2,400-ft. landing strips on this Class I airport is paved and has paved taxiways and ramps for all-weather operations. Total costs: Less than $80,000 for entire project, of which $26,000 went for paving.
—(CAA Photo by Norman Simmons.)

Low-Cost All-Weather Airport for Small Towns

HOW cheap can a good Class I airport be built, complete with paving and buildings? Small towns and CAA are making considerable progress in the development of such facilities through maximum utilization of Federal-aid assistance and available surplus military buildings. Until comparatively recently, most CAA experience had been with elaborate municipal and military airport facilities. But National Airport Plan emphasis on smaller projects throughout the country has resulted in more and better small airports for less money.

A good example is found in the recently completed Quanah (Texas) Municipal Airport in the Texas Panhandle. This is a Class I airport consisting of three landing strips, each 2,400 ft. long and 150 ft. wide; graded taxi strips 50 ft. wide; a paved runway 2,300 ft. long and 50 ft. wide; paved taxiways 20 ft. wide, a paved parking apron, paved access road and paved strips connecting all hangars with the runway and taxiway system for all-weather operations.

The airport also has a hangar and a group of individual T hangars, and an excellent small ad building is provided. Federal aid was not involved in the buildings, but the city obtained them with very little expense, constructing them from a surplus military building moved from a surplus military airport located some distance away at a nearby town.

"Initially, a turf airport was to be built, but a series of studies showed that an all-weather field could be provided economically through the judicious use of pavement on the principal landing strip into the prevailing wind," said J. D. Church, CAA district airport engineer. "About 20,000 sq. yds. of paving, which is less than half the area contained in the usual airline runway, has been distributed in such a way as to make it possible for an airplane to land, taxi to a hangar or park near the ad building and gas pits without ever getting in the mud. Paved strips serving existing hangars are arranged to provide locations for future T hangars."

The costs of the entire project have been as follows: Purchase of 320-acre site, $27,700; grading and drainage, $19,300; paving, $26,000; water supply, $700; engineering and administrative expense, $5,100. That totals $78,800, of which CAA provided $32,450.

Only about 20 per cent of the site is actually needed for flying. The remaining 260 acres are being farmed in wheat to provide revenue for airport maintenance and operations. ★ ★ ★

Questions and Answers For Airport Operators

Helping Single-Engine Airlines

QUESTION: There seems to be a growing belief that within a short time single-engine aircraft may be certificated for scheduled operations. There appears to be considerable need, especially in providing service to smaller communities. What can we do to encourage the use of this type of operation on our own airport? I am asking this especially in connection with the rates and charges which have primarily been set up to serve airlines using twin-engine equipment. I believe that a good many of the single-engine operations, if, as and when set up, will use aircraft of such limited seating capacity that it would be unreasonably oppressive to charge our regular landing fees which have been tailored to fit aircraft of much greater loads. I ask this especially in view of the covenant not to grant better terms

EXECUTIVE PLANE-O-TEL FOR 10 TWINS OR 20 SINGLE-ENGINE PLANES has been opened on Love Field in Dallas by Southwest Airmotive. It is 40 ft. by 400 ft., with 21-ft. sliding doors and 14-ft. vertical clearance. Costing $50,000, Plane-O-Tel's backside has stalls for 40 cars. Project is latest step in SAC expansion including doubling of engine shop capacity to 60 engines monthly and modernization of radio and instrument shops. —(Southwest Airmotive Photo.)

which is present in all our contracts with airlines.

ANSWER: Your question has in a measure been answered by one municipality recently. That municipality has recognized the low revenue production of small single-engine aircraft and has set up rates measurable by comparison with the revenue potentialities of small single-engine aircraft with the idea of encouraging such transportation and keeping the burden of costs in line. They have afforded the same terms for aircraft of similar types to other airlines having contracts on their field in the belief that this is in compliance with covenants not to grant better terms.

Part-Time Operators

QUESTION: **I read a question and answer in the June SOUTHERN FLIGHT regarding small town operators' minimum needs. We have a case in our town where our small turf airport will not support an operator even if we were to follow the outlined suggestions. We now have only two aircraft based here and we have a small number of transients coming through. Can you figure any way we can keep the airport open and furnish gas service and the various things we need without just paying a man a salary to handle it? We have no hangars and one of the two airplanes in our town is now kept in storage on another airport 27 miles away. What would you do about that?**

ANSWER: Taking your last question first, we think it would be a very simple matter for the owner who is required to keep his airplane 27 miles away (because there is no hangar) to build himself a low-cost T hangar in the building area of the airport under a reasonable lease with your city. If at the present time your airport won't support an operator even in a limited way, would it not be possible for someone near the airport, either a filling station operator or a garage mechanic or other responsible party to accept the responsibility for looking after the airport, transient and local pilots? Your minimum requirement in that case would be a telephone at the airport and a sign saying "For Gasoline and Oil Call No. ....." If such an agent could be secured, he could also make arrangements with an operator in a larger town at not too great a distance to supply flight training, charter service and any other aviation need on a commission basis.

FOR RENT: 120'x100' steel, insulated, heated hangar with 20'x100' lean-to at Class 3 airport with 4,000 foot hard surface runways located within 20 minutes flying time from Washington or Baltimore. Ideal location for fixed base operator. Gasoline concession available if interested. Contact: S. J. Mannette, Cities Service Oil Company, Box 148, Easton, Maryland.

FOR SALE

4 BEECHCRAFT D-18-C(T)—CAR 04b

1 BEECHCRAFT D-18-S—CAR 03

4 CONTINENTAL R9A ENGINES
Overhauled, Pickled and Boxed

1 PRATT & WHITNEY R-985—14-B
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Aircraft and Engines low time since major overhauled — Polished — Waxed. In near new condition. Licensed spring 1950. Engine and Instrument Overhaul Shops — Signal Generators, ARC-1's, MN-26-K's, Marker Beacons, Link Trainer, Beech spares.

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Engines approved - - -	700 hrs. between overhaul
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This excellent equipment permitted over 3 million passenger-mile accident-free air carrier operation and the highest schedule completion (99.6%) of ANY certificated airline in the world — Contact . . .

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Radio Reviews

Showing backside of ARC 3 receiver with 24 channels.

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EXECUTIVE PILOTS frequently ask our advice about maximum VHF usefulness when they desire an ideal installation of high-quality equipment—one set for communications and a separate set for navigation.

FOR NAVIGATION, experience demonstrates that tunable receivers provide most satisfactory service. This gives full band selectivity.

FOR COMMUNICATIONS, we have found crystal control more desirable — where weight will permit. It provides quick changing from station to station. And you can count on latching onto a station even if it happens to be momentarily quiet, as is the case between messages.

AS MANY CHANNELS AS DESIRED are provided in our custom installations, although 16 channels will fill your needs 95 per cent of the time. This we accomplish by modifying the surplus and excellent ARC 3 receiver, which comes with 8 channels but to which we add 16 or more in the neatest and most practical package you ever saw. Weight is increased only 4 lbs. But look at the advantage of guarding two channels simultaneously while maintaining navigation and communication contacts.

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JUST AMONG OURSELVES

(Continued from page 6)

ment cardboard for bread and butter have acquired a defeatist attitude over the steady decline in business. Many proprietors and executives have either forgotten how to sell or figure that there's not enough business to justify the amount of sales effort necessary to keep going. They don't understand why customers have ceased coming by and taking their goods and services away from them while they sit in a comfortable swivel chair behind a mahogany desk. The buyer's market is simply too tough and complex for them.

L. R. Boulware, General Electric Company's vice president in charge of employe relations, commenting on the return of the buyer's market, has this to say about advertising and selling: "Makers and sellers must advertise more effectively and sell harder—must persuade more people to buy in these times. General Electric is spending more money on advertising and selling this year than ever before. Our advertising is the biggest and best ever. Our sales force, our distributors, and our dealers are out, as never before, after the sales that make the jobs."

Commercial aviation might well follow the time-tested policies of successful members of the American industrial team. With far better products at relatively lower costs and with a much stronger distribution system than we had before the war it stands to reason that commercial aviation business should be at least four times as good as it was in 1940, what with four times the amount of surplus money for discretionary spending. About the only missing link is the willingness to get out and sell. ★ ★ ★

WE FLY THE HIGH WAY

(Continued from page 26)

between Lander and the Rattlesnake Mountains, just Northwest of the Seminole Dam. Where we had counted antelope by the threes in other areas, here we counted them in herds having up to sixty and seventy each. In this single area last Winter conservation officials in lightplanes counted over 80,000 antelope. It is no exaggeration to report that those we saw were more numerous per square mile than cattle are in the lush grasses of Oklahoma's famous Hereford Heaven. This is sage country — rolling plains at 7,000-ft. elevation — and we flew the deck to photograph the antelopes for mile after mile. After a night at Laramie, we ducked back into the big Colorado Rockies for a landing at Estes Park's nice air strip and tremendous scenery. Nobody was around the strip so we headed home. From Denver, cutting across the Panhandle non-stop, we made it back at the scheduled time.

Six days of mountain flying, of enjoying never-to-be-forgotten scenery would take two weeks to appreciate, spending hours at a time going back over experiences which took only minutes to transpire. Luckily we had recorded some of them with cameras. But from it all emerged the simple fact that here was a quickie flying vacation which lightplane owners can enjoy. The best part is that they don't have to spend all their time "on the road" as motorists do. Nor do they need devote weeks to planning. Just get up and go and make your fun where you find it—that's our recommendation to those capable of common-sense flying in good, modern airplanes they can depend on. ★ ★ ★

SERVICE GUIDE FOR FLIERS —

WHERE to STOP

GEORGIA

FLYING TO ATLANTA?

For QUICK, COURTEOUS service stop at
Southeastern Air Service
Municipal Airport, C. C. Gilham, Mgr.
Distributors: Stinson, Ercoupe, Continental Parts; Lear Radios; Firestone Products; Gulf Gas and Oil. Careful handling; quick, expert repairs; inside storage.
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"ESSO RESEARCH has pioneered the way to better fuels and lubricants since the days of Kitty Hawk . . . a mighty good reason why today we hear so many flyers say they prefer to land where they see the famous Esso Winged Oval — for *dependable* aviation products."

Lee Bowman, President, Bowman Flying Service, Inc., Keene Airport, Keene, N. H.

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Herman Thwaites, Esso Laboratories Linden, N. J.

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The precision of a fine watchmaker's skill goes into every overhaul SAC instrument technicians are factory trained. Shop is authorized by leading manufacturers.

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Flight Instruments —	
Air speed	$6.50
Altimeter, sensitive	15.00
Clock, standard	10.00
Compass, liquid	7.50
Gyro, directional	42.50
Gyro, turn & bank	15.00
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Vacuum gauge	3.50
Engine Instruments —	
Manifold pressure gauge	9.00
Tachometer indicator, centrifugal (cable driven)	6.50
Other —	
Compass compensation	7.00

Also radium painting, demagnetizing, custom panel designing.

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SAC's Accessory Shop is factory approved and is elaborately equipped for testing and overhaul operations.

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Scintilla magneto	$12.00
Eisemann magneto	12.00
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Romec or Thompson vane-type fuel pump	10.00
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